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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/779,374	02/07/2001	Vladimir Mancevski	500929.000008	7983

7590  
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04/13/2007

EXAMINER

SMITH, BRADLEY

ART UNIT

PAPER NUMBER

2891

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/779,374

Applicant(s)

MANCEVSKI, VLADIMIR

Examiner

Bradley K. Smith

Art Unit

2891

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 137-148 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 137-148 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 137-148 are rejected under 35 U.S.C. 102(e) as being anticipated by Urayama et al. (US Patent 6,650,061). With regards to claims 137, Urayama disclose at least one carbon nanotube (element 6 figure 3d) electrically coupled to a patterned conductive layer (element 2c figure 2) within a horizontally oriented substrate (figure 3f), wherein substantially all of the carbon nanotubes (element 6 figure 3d) are vertically oriented. With regards to claims 138, Urayama discloses wherein the at least one vertically oriented carbon nanotube is partially embedded within the substrate (the substrate is considered layers 1-6). With regards to claims 139, Urayama discloses wherein the at least one vertically oriented carbon nanotube is fully embedded within the substrate without protruding beyond the substrate (see figure 23). With regards to claims 140, Urayama discloses wherein the at least one vertically oriented carbon nanotubes is disposed outwardly from the substrate (figure 16). With regards to claims 141, Urayama discloses wherein the substrate comprises a substrate material from a class consisting of undoped silicon, doped silicon, crystalline silicon, polysilicon, silicon nitride, undoped silicon dioxide (element 3 figure 6a), and doped silicon dioxide. With regards to claims 142, Urayama discloses wherein at least one vertically oriented carbon nanotube is electrically isolated from the substrate (SiO<sub>2</sub> isolates

from the rest of the substrate). With regards to claims 143, Urayama discloses wherein the at least one vertically oriented nanotube is fabricated within a specified area of the substrate (see figure 6e). With regards to claims 144, Urayama discloses comprising a second patterned conductive layer within the horizontally oriented substrate (element 2a see figure 6a). With regards to claims 145, Urayama discloses wherein the carbon nanotube is fabricated within vertically aligned hole within the substrate, wherein the hole has a nano-sized diameter (column 18 lines 39 and 40). With regards to claims 146, Urayama discloses wherein the hole diameter is preferably in the range from about 1 nanometer to about 50 nanometers (column 18 lines 39 and 40). With regards to claims 147, Urayama discloses wherein said carbon nanotube is conductive (it is inherent that is conductive because it emits electrons). With regards to claims 148, Urayama discloses wherein the conductive layer material comprises a member of the class consisting of aluminum, copper, tungsten, titanium, nickel, chromium, and their alloys column 8 line 61).

### ***Response to Arguments***

Applicant's arguments with respect to claims 137-148 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after


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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley K. Smith whose telephone number is 571-272-1884. The examiner can normally be reached on 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Baumeister can be reached on 571-272-1722. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Bradley K Smith  
Primary Examiner  
Art Unit 2891